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ABSTRACT

Adolescence was the focus of an Urban Development Forum, a component of the Research for Better Schools, that explored the factors of effective schooling in terms of their impact on young people in large, urban systems. This forum featured a major presentation by Joseph Adelson. Focusing his presentation on the cognitive growth in adolescence, he reported on two major investigations of young people--a cross-national project and a study of an American urban population--both of which involved in-depth interviews of teenage subjects and a major analysis of findings. Reporting to educators concerned with effective schools, he highlights five topics that are involved in the teenager's readiness to think fruitfully about social and humanistic matters: (1) the community, (2) the law, (3) principles, (4) grasp of psychology, and (5) understanding the social order. Four speakers commented on Adelson's presentation: David Elkin (a Piagetian by training and conception), Allan Glatthorn (a specialist in curriculum development), Ione Vargas (a dean of the School of Social Administration at Temple University), and Frederick McDonald (a senior research psychologist at Educational Testing Service). The papers of these five presenters are contained in this document and provide perspectives on adolescence and information for further educational thought. (PN)

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THE DEVELOPMENT OF ADOLESCENT THINKING: SOME VIEWS FOR EFFECTIVE SCHOOLS

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THE DEVELOPMENT OF ADOLESCENT THINKING: SOME VIEWS FOR EFFECTIVE SCHOOLS

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1983

A COMMITMENT TO URBAN EDUCATION

Research for Better Schools, Inc. (RBS) is a regional educational laboratory that uses the results of educational research and development to assist the elementary and secondary schools in Delaware, New Jersey, and Pennsylvania. This assistance takes the form of information, staff development programs, management training and consulting, evaluating, and special research projects.

RBS' work in urban education is founded in a firm commitment to the goal of equal educational opportunity. Every child should have an opportunity to attain a high quality education. Therefore, improving the effectiveness of the public schools is the focus of the laboratory's activities in urban areas.

The Urban Development Component addresses urban educational issues by bringing together the resources of the laboratory and those of the professional associations, parent and community groups, state agencies, and urban school districts. The goal is to unite the knowledge about school effectiveness with the commitment of educational interest groups to forge a new coalition for the improvement of the public schools.

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EDITOR'S INTRODUCTION

Adolescence is a period of interest to just about everyone: the six-year-old teases his older brother about the girls who have begun to call him; grandparents fondly recall teenage life in the "good old days" before television or the combustion engine. This year Americans mark the thirtieth anniversary of a favored publication, Cather in the Rye, the slim novel packed with the remarkable exploits of Holden Caulfield--"a tall, skinny, prematurely gray-haired kid from West Seventy-first Street, a self-proclaimed pacifist and sex maniac with a fondness for profanity" (Moss, 1981, p.56). There are mixed views about what happens to youngsters in the second decade of life. But there is little disagreement that the period is significant to the development of the physiological, emotional, and mental characteristics of all young people.

There is a growing interest, too, in making schools responsive environments for populations of teenagers. The Center for Early Adolescence at the University of North Carolina has developed materials especially focused on user needs in the middle grades (Dorman, 1981). A conference on adolescent development and secondary schooling recently examined the research findings of both fields in order to identify new implications for the education of 11 to 18 year olds (Newmann & Sleeter, 1982). At Research for Better Schools, Inc. (RBS) in Philadelphia, adolescence was the focus of an Urban Development Forum that explored the factors of effective schooling in terms of their impact on young people in large, urban systems (Presseisen, 1982).

The RBS Forum featured a major presentation by Joseph Adelson, co-director of the Psychological Clinic at the University of Michigan and editor of the formidable Handbook of Adolescent Psychology (1980). Adelson focused his presentation on the cognitive growth of adolescence, yet he was quick to point out even these amazing changes "must be understood to represent only one element of a more complex process wherein capacity, knowledge, and motivation interact continuously" (Adelson, 1982). In his presentation, Adelson reported on two major investigations of young people--a cross-national project and a study of an American urban population--both of which involved in-depth interviews of teenage subjects and a major analysis of findings. Adelson highlighted five topics to report on to the educators concerned with effective schools. These topics were selected because he saw each topic involved significantly in the teenager's readiness to think fruitfully about social and humanistic matters. If the assessment of effective schooling by Rutter, Maugham, Mortimer, and Ouston (1979) is correct, the school as a meaningful social institution is obviously interrelated with Adelson's five topics: 1) The community; 2) The law; 3) Principles; 4) Grasp of psychology; and 5) Understanding the social order.

Four speakers commented on Adelson's presentation. Although all four commentators are educators, each brings a different experience and a different perspective to the schooling of adolescents. David Elkind, chairman of the Eliot-Pearson Department of Child Study at Tufts University, is a Piagetian by training and conception. He raised questions about the curriculum decisions in the classroom and the

teacher's awareness of the operations available to the learners involved. Assessment concerns should parallel the cognitive levels of understanding exhibited by the teenager, said Elkind, and he encouraged teachers to use both formal and informal measures to check students' abilities. Elkind underlined the importance of linguistic clues to students' operations, although he was quick to point out that words are only the outer manifestation of growing internal symbol systems. Elkind approached the content of schooling from the question of what mental abilities are required to learn a particular subject. Planning meaningful programs for students and sequencing topics within courses may well hinge on some of the points raised by David Elkind.

Allan Glatthorn is a professor of education at the Graduate School of Education, University of Pennsylvania. A specialist in curriculum development, Glatthorn's greatest interest is in the language arts program. He shares with Elkind the concern for the proper match between subject matter and cognitive level. At the RBS Forum, Glatthorn stressed the danger of too much abstraction too early in the adolescent's program. He particularly focused on the ambivalent needs of the middle school youngster. Agreeing with Adelson, Glatthorn raised questions about the consistency of the teenager's development. Advanced cognitive abilities may be available in some subject areas but not in others, suggested Glatthorn. The implications for teacher awareness and instructional flexibility are serious, particularly as related to achievement expectations as advocated in effective schools literature. Glatthorn warned against a reductionist view of effective schooling, especially in applying elementary research findings to secondary

education. Such a view, he proposed, is antithetical to the needs of adolescents whose world is expanding and growing all-the-more complex.

Ione Vargus is dean of the School of Social Administration at Temple University. She sees schooling as one of the major social systems influencing young people. She finds the school is one institution among several in the larger community which must come to terms with the multiple tasks of adolescence. Vargus stressed the importance of values testing to the developing teenager. She saw many of society's conflicts touching the lives and learning of young people both in and beyond the school. The significance of the peer group and the personal experience of young people in ethnic and cultural settings were emphasized in Vargus' presentation. She did not disagree with Adelson's findings on adolescents' growing consciousness of community, but she raised the serious question of how to relate instruction in the classroom to the realities of street culture and the significant meanings of a democratic education in America's schools.

Frederick McDonald was senior research psychologist at Educational Testing Service at the time of the RBS Forum. He now is research professor at the Graduate School of Education, Fordham University. His work is primarily focused on research about teaching, but his extensive experience ranges from assessment to science curricula, and from children's space conceptions to nursing programs. At the RBS Forum, McDonald presented a dissonant, if not radical view of adolescence. Following up on Vargus' position on teenage values testing, McDonald suggested that there is a basic cultural dilemma in secondary schooling. The school is caught up in the tension of either teaching the values of

society or of preparing young people to be able to raise question about society's values in practice. The secondary schools we have now, suggested McDonald, are only holding pens--keeping youngsters out of the labor market or off the streets. McDonald proposed an alternative view of the high school education that is needed by America's adolescents, one that can challenge the young teenager and provide a creative, productive experience. McDonald would agree with Mergendoller's (1982) facilitation approach to secondary schooling and he would seriously consider Sheehy's (1982) pathfinder interpretation of adult success. Some young people have bad times in late childhood or adolescence, but instead of cowering or regressing, they make a leap for growth. They learn to take risks, to muster up their abilities, struggle against the obstacles in their lives, and "pull themselves up by their own bootstraps." McDonald wants to build secondary schools where such learning can take place.

The presenters at the RBS Forum on Adolescence and Effective Schools speak best in their own words. Their papers provide us with many perspectives on adolescence and much food for further educational thought. They underline the fact that to provide schooling for the Holden Caulfields in the decades ahead will be no simple task.

THE GROWTH OF THOUGHT IN ADOLESCENCE

by Joseph Adelson

In The Principles of Psychology, William James wrote: "To detect the moment of the instinctive readiness for the subject is, then, the first duty of every educator." James was discussing what we would now call cognitive readiness, that is, the level of intellectual growth which allows the student to grasp the learning offered by the teacher. At the time James was writing, about 90 years ago, not much was known in any systematic fashion about when youngsters might or might not be ready to learn a given type of knowledge--either subject matter or concepts. It is likely, however, that the wise teacher was able to draw upon his or her own experience in deciding what did or did not "go" at a given age level. I suspect that in that respect we have not yet advanced much beyond James' time. We are only now beginning to achieve some sense of how youngsters in early adolescence develop the capacity to acquire concepts. The work I will report here is a step--an early step, I want to emphasize--in developing an understanding of how youngsters learn to think in a recognizably "adult" fashion about social, political, and humanistic issues.

If you speak to youngsters at the age of 12, let us say, and if you listen carefully to what they say, you will almost certainly find that they enjoy a very meager understanding of political life, or history, or aesthetics, and the like. One's first temptation is to ascribe this to an absence of the required information, to the child's not having been taught the subject matter in school. But if you continue in a careful

scrutiny of the child's mode of thinking, you will begin to suspect that something else is at work, that the youngster does not have the conceptual framework through which he or she can organize and order the information that the educator is able to provide.

That notion was the beginning of the research to be reported here. I had begun with the aim of studying the development of political attitudes during the course of adolescence. In trying to develop an interview format, I spent a good deal of time talking informally with youngsters in early adolescence, largely from the ages of 12 to 14. What struck me in these conversations was that my interviewees very often had clear political attitudes, and also had, at least some of the time, a sufficient store of accurate information. What most of them seemed to lack was an understanding of how it all held together. There was, so it seemed, a kind of intellectual smorgasbord, wherein ignorance and knowledge, utter naivete and spasms of sophistication, co-existed uneasily, indeed at times a bit weirdly. Speaking to somewhat older adolescents, 16 year olds, for example, one gained a very different impression. These youngsters might or might not be interested in politics, might or might not have much information, might or might not have coherent political attitudes; yet what they all seemed to share was a more or less structured sense of the political.

I came to the conclusion that the major difference between younger and older adolescents was the capacity of the latter to think <u>abstractly</u> when the occasion demanded it. Now that was not exactly a breathtaking discovery, since the shift from concrete to abstract modes of thought in adolescence has been observed many times before, particularly by Piaget

and his collaborators. But it had not been explored in any depth, and it seemed intriguing to begin doing so, to abandon the study of political attitudes, and to focus instead on the development of political cognitions.

But how to do so? If we ask youngsters about current political events, they would be likely to tell us what they knew, or what they believed, and so we would be unable to see clearly enough how they thought. We want an interview format which would help the child escape the pull of the quotidian, which would free him or her to think more imaginatively. After some trial and error, we hit upon a format with the following premise: A thousand people leave their country and move to a Pacific island to start a new society. We then offered our youngsters a great many questions on a wide variety of political, social, and moral issues: The scope and power limits of political authority; the reciprocal obligations of the individual and the community; the nature of crime and justice; the collision between personal freedom and the common good; the prospects for utopia; and so on. Put this way, it sounds rather formidable, but in fact the questions were straightforward and generally quite concrete. The work I will discuss here is based on two major investigations, one cross-national, comparing over 300 youngsters in our own country, England, and Germany ranging in age from 11 to 18 from grades 5 - 12; and a second study, in which we interviewed about 450 adolescents, drawn from an urban area, largely blue-collar in origin, and equally divided among blacks and whites. This second study was directed and analyzed by my colleague, Judith Gallatin. Since I want to concentrate upon the

processes of thought, rather than content, this paper will give no attention to the national differences we found, nor to race, nor for that matter, to gender. Let me say briefly that there were indeed national differences, though not of great magnitude, largely in social outlook. On the other hand, and contrary to our own expectations, we have consistently found only paltry differences associated with race or sex.

The Findings

The interviews took about an hour to complete, and involved our asking nearly 100 questions, not including probes. As you can imagine, there is an abundance of findings, so much so that it would be impossible to report them even in summary form. In this paper, I will limit the presentation to five topics, each of which strikes us as being involved in a fundamental way in the youngster's readiness to think fruitfully about social and humanistic matters. To offer a general preview, we found in most cases a decided shift in perspective, or grasp, somewhere in early adolescence, usually between the ages of 13 and 15. This is not to suggest that there is a sharp break at that point. In almost all cases we see a gradual change in cognitive orientation over the period from 11 or so to the age of 18. But on the whole, the most important period of change is the one mentioned.

1. The Community

Suppose we were to ask a typical group of 12 year olds the question: What is the purpose of government? We would find that a

great many of them are unable to answer the question at all. Perhaps about 10 percent will not respond, but more to the point, nearly half of them will be unable to give an adequate answer, and by adequate we mean an answer which most of us would recognize as coherent. Here is an example: "So everything won't go wrong in the country. They want to have a government because they respect him and they think he's a good man." Here is another: "To try to keep the state or the country from fighting, to work out agreements with them." Now we want to emphasize that these are ordinary responses, that we have chosen them at random, to illustrate the typical language of a great many youngsters at the ages of 11, 12, and at times 13.

What has gone wrong in the child's understanding? The first excerpt tells us part of the answer--a tendency to personalize concepts which have to be treated abstractly. Hence, the term "government" is used as though it referred to an individual person. One might take this to be merely a mishearing, were it not for the fact that similar confusions are commonplace. The child also has problems handling such notions as "education" (it means "the teacher" or "the principal") or the justice system (it becomes "the police" or "the judge" or "the jail"). The personalizing of concepts is only one example of a more general limitation in thought. The child is unable to think except in concrete terms not only about institutions, but also about their functions. With respect to government, for example, the youngster is unable to advance a general principle of its purposes; he or she can only point to particular activities, such as fixing highways, or putting people in jail. The transition from concrete to abstract modes of

discourse is dramatic--at the age of 11, no youngsters in our cross-national study were able to speak at a high level of abstraction, whereas at the age of 18, there were no youngsters whose responses were entirely concrete.

Table 1 shows the magnitude of the transition.

Table 1

Age (N=326)	11	13	15	18
1. Concrete	57	24	07	00
2. Low level abstraction	28	64	51	16
3. High level abstraction	00	07	42	71

What holds for "government" holds for all other concepts involving social collectivities: Unable to imagine them conceptually, the child cannot include them in his or her understanding of social processes. When asked to speculate on social events, or offer recommendations on social issues, the child is limited to the concrete understanding of these events and issues, and tends to answer not in terms of the community as a whole, but exclusively in terms of individuals. For example, when we asked the reasons a community might have for requiring universal vaccination, we found that younger adolescents tended to answer primarily in terms of benefits to the children themselves, while

older adolescents could understand that the benefit would also accrue to the community as a whole. To take another issue: Why do we require that children be schooled until they reach the age of sixteen? One plausible answer, of course, is that youngsters benefit; but the needs of society at large are also involved, and this particular answer is not available to youngsters until later in adolescence.

Table 2 and 3 show the distribution by percentages in terms of increasing age.

Table 2

Age (N=434)	12	14	16	18
Survival of community	07	14	23	45

Table 3

Age (N=219)	12	14	16	18
Consciousness of community	11	34	36	41

2. The Law

Without question the most surprising discovery we made concerned the apparent blood-thirstiness of our younger subjects, their tendency to

think about law and justice and government in terms of wickedness, punishment, and coercion. We might want to stress the qualifier "apparent" at this point, for there is some reason to doubt that our youngsters are as sanguinary as they sound; but there is no question that they talk about social processes, especially those involving laws and rules, in a most Hobbesian fashion. Here are some striking examples, a bit more graphic than most, but otherwise not out of the ordinary.

(On the best reason for sending people to jail):

> Well, these people who are in jail for about five years must still own the same grudge, then I would put them in for triple or double the time. I think they would learn their lesson then.

(One how to teach people not to commit crimes in the future):

> Jail is usually the best thing, but there are others . . .in the 19th century they used to torture people for doing things. Now I think the best place to teach people is in solitary confinement.

These were 13 year olds, cheerful and bright-eyed, and so far as we can tell, not wearing executioners' hoods. But in their discourse on social and moral issues they easily gave way to a rather primitive notion of Original Sin, and to punitive, at times totalitarian views of the rights of the state in curbing wickedness. For example, if you ask young adolescents what they would do to suppress the smuggling of cigarettes

into a community which has banned their purchase, you will get answers straight out of Orwell's 1984--television cameras in everybody's bedroom, and so on. In a few short years, this view of social reality will change, and give way to a view which emphasizes more humane methods of punishment, the possibility of moral rehabilitation, and a general view that the purpose of the law is to protect and benefit the citizen rather than keep him or her constrained and in fear of social reprisal. The change is almost as dramatic as that which we see in the shift from concrete to abstract. Table 4 shows us the answers to a question on "the purpose of laws," and Table 5 gives us the answers to a question on "the purpose of government," once again, though with a new coating.

Table 4

Age (N=433)	12	14	16	18
Restriction	37	35	29	22
Setting standards	16	22	34	34
Sense of community	02	09	14	18

Table 5

Age (N=336)	11	13	15	18
Restriction	73	68	44	20
Restriction and Benefit	12	18	33	38
Benefit	07	09	20	41

3. Principles

We have so far observed two major developments in political thought from the onset of adolescence to its end: the achievement of a sociocentric perspective; the ability to think about social and moral and philosophical issues while keeping the total community in mind; and the gradual abandonment of authoritarian, punitive views of morality and the law. We now add a third theme: the youngster's capacity to make use of moral and political principles--ideas and ideals--in organizing his or her thinking about social issues. Once available, that capacity alters--decisively and irrevocably--the youngster's definition of social issues, and at the same time it alters the child's sense of him or herself as a social and political actor. Most current theories of political attitudes and thinking stress the central significance of more or less stable, more or less complex systems of belief, the presence of which allows the person to organize his or her understanding of social and political reality. It is in the period we now have under consideration that we first see the emergence of those systems, as the child begins to use principles in coming to legal, moral, political, and social judgments. To judge by our interviews, however, it is a rather late development in adolescence. We seem to see the first signs of it when the child is between 14 and 16, and the use of principles does not make itself felt fully until the end of the adolescent period.

Suppose you were to ask a child of 12 about a dispute between an individual citizen and the government--let us say it is an eminent domain issue, wherein the government wants the land for a highway, while the

landowner wants to retain it for his or her own purposes, or feels the government's price is unfair. The youngster will find it extremely difficult to give a reasoned answer to that dilemma. The youngster will either side with the government, because on the whole children of that age think that might is right; though he or she may also side with the landowner, especially so if the question is phrased to represent him or her as victimized. In either case, the youngster's understanding of the issue will be particularistic. He or she will be unable to find the general principle that would cover a range of circumstances governing disputes between state and citizen. The learner has no overall sense of the mutual rights and obligations between the two. If you were to try to explain the principles involved, you would likely find that the child can apply it to the question at hand, but would be unable to extrapolate it to related issues. The child's grasp of principle is still too uncertain. He or she does not yet understand how to categorize, now to place a given social problem or issue in the appropriate conceptual box.

As a result, young adolescents will often seem to contradict themselves, saying that on the one hand they believe in this or that principle, yet a few moments later, in the course of spontaneous discourse, proposing entirely contradictory notions. A child may tell you that he or she believes in "freedom of speech," yet tell you later that it is not patriotic to complain about the government. Or a child may aver solemnly that "the majority rules," yet a few questions further on in the interview schedule remark that the smartest person ought to make all the decisions. Faced with examples of this sort, it is tempting to become a bit exasperated, and to assume that the child has been taught

poorly or superficially. In all likelihood, however, the learner has only been taught prematurely. Although there is a case to be made for teaching certain materials before the child has achieved complete readiness to absorb them, it must be understood that there are some limits imposed by the normal intellectual limitations of this period. In the fullness of time, two years let us say, the child will be perfectly capable of an adequate grasp of social principles and their proper applications; and some children will have become so entranced by that capacity, that they will be tediously ideological.

4. The Grasp of Psychology

At the outset of adolescence, youngsters have a very thinly textured understanding of the motives governing human behavior. If you ask them to speculate on traits of character or recurrences in behavior--for example, why are some people law-abiding, while others are not?--or on what produces a reputation--for example, what makes some people respected and chosen for political leadership?--you find either they are unable to do so altogether, or their grasp of the requisite language is so simple and monotonic as to warrant the term "primitive." People commit crimes because they are criminal, they may say, or people who are criminals commit crimes. Some people are respected because they are nice, or because people think they will do a good job. There are of course exceptions, but that is more or less the level on which most children from 11 to 13 address issues of human motivation, character, and recurrent behavior. The child is either confused or uncomfortable in venturing beyond a rather concrete action-language. People are defined

by their acts. It would be untrue to state that motives go unmentioned, but the motives tend to be simple and direct. People do things because they get mad, or because they want to get back at someone, or because they're frightened, or because they want to be nice. We almost never come across statements which suggest a conflict among motives, or an ambivalence within the personality. It is direct and straightforward, something like the action in a medieval morality play.

It is hard to say exactly when this changes, since here as elsewhere we find marked individual variations; but it is safe to say that by the time children are 15 or 16, a much richer and sophisticated grasp of human psychology is evident. They are, for example, able to adduce several motives or traits at once in sketching a personality. They are able to think in terms of a conflict of motives, or of oppositions within the self. They are able to understand the indirect effects of incentives and of influences, and are not limited to the immediate or the direct as potential influences on behavior. They can think in terms of gradations in motivation, and of variations in personality. Neither human motivation nor human personality is subject to the either/or formulations so common as to be almost universal in the early years of adolescence. They can understand the effects of the past upon the present--as in talking about the effects of the family upon the construction of character--as well as venturing some hypotheses about the effects of present actions upon the future--as in speculating about the effects of a decision taken now upon later personal outcomes.

5. Understanding the Social Order

The textural thinness we noted in discussing the pre-adolescent's

grasp of human psychology can also be found in the attempt to understand the processes of the social order--the common institutions of society and the policy. A good deal of the time they give the impression of knowing more than they actually do. At an early age youngsters are exposed to information about politics and government, so that when they are asked, they may be able to offer the appearance of having attained a certain level of understanding. It is only when we carry the inquiry further that we learn how inaccurate or incomplete or superficial that grasp actually is. Hence, we find that most youngsters at the outset of adolescence know what a political party is, and can talk about Democrats and Republicans, and understand that in this country governmental officials are usually elected. But further questioning may reveal that many children of this age believe that political parties do the job of governing; the youngster confuses party and government, or party and nation, just as he or she may in other contexts confuse nation and government, or municipality and nation. At the ages of 11 and 12, confusions of this sort are commonplace (though by no means universal). The youngster does not have a well-grounded sense of the structure of things in the social order--which systems carry out which functions, and how the functions and systems are related to each other.

In the next stage, which most youngsters achieve between the ages of 14 and 16, we see the errors and confusions disappear. The child shows an accurate grasp of institutions, their functions, and their relations to each other; but that tends to be rudimentary, in that the youngster can usually articulate only one idea at a time. Thus, in discussing political parties, he or she may put forward the notion that they exist

to run candidates, or that they stand for certain policies; but it is unlikely that he or she will take these two ideas and put them together. It is only at the age of 17 and 18 that youngsters comfortably synthesize several ideas at once in their statements about the institutions of the social order. To continue with our example, at that age they can see parties as giving voice to positions, through candidates, whom they recruit, finance, and sponsor. That understanding of the political party is second nature to almost any sentient adult; but it is only gradually achieved through the course of adolescence.

The Implications for Teaching

What can the classroom teacher learn from these findings? Something, I hope, though not everything. These observations on the child's intellectual development are offered not as revolutionary, not as a breakthrough--we have had enough of that in the last two decades in educational writing. I hope it will help the teacher clarify some of the difficulties he or she may meet on a daily basis in the course of teaching ideas in history or literature or government to youngsters in the middle and junior high school range. That seems to be a particularly difficult age group to reach, in some part because of the biological and social changes taking place among that age group; but also because it is an age of great cognitive change. The youngster often seems to flip-flop in terms of intellectual level, at one moment concrete and rather primitive, at another moment, in a related area, capable of abstract and advanced thought. Although the experienced teacher of youngsters at

these age levels is certainly quite aware of these vicissitudes, it may nevertheless be of some help to have a more or less systematic understanding of the direction and tempo of cognitive change during this period.

Let us review a few of these changes. We have seen that the child moves from the concrete to a capacity for the abstract during this time. A great many words and concepts which the adult takes for granted, which are second nature to the teacher--such ideas as "government," "democracy," "education," "freedom of speech," "justice"--all of these and many, many more, though recognizable to the child, are nevertheless only fitfully and occasionally understood. Even on the rare occasions when a child can define these terms, he or she is unlikely to be able to sense the connotations they have acquired for most adults. Consequently, the teacher and the student may well be talking past each other in any discussion of the civic life, or of moral issues.

In certain other important ways, the youngster's cognitive modes are substantially, though often silently, different from those the adult takes for granted. Time perspective is generally foreshortened. There is a diminished sense of history, of the past, and by this I mean more than that the child does not have an adequate knowledge of history--I mean that he or she is unable to think in a comfortable way about the effects of the past upon the present. Similarly, the constriction of time frame can be seen in an inability to understand the effect of present events much beyond the immediate future. Long-range consequences are not easily understood by youngsters at this age, nor can they imagine alternative outcomes to a single event occurring in the present.

That rootedness in the immediate and in the present may also account for the difficulties youngsters have in understanding the mutability of institutions, laws, and other human-made phenomena. In the early years of adolescence, children take law to be chiseled in stone. They seem unable to understand that laws are human inventions which can be superseded when the collective will decides. Similarly, they find it difficult to grasp that social institutions are subject to modification. Whatever is, has always existed, and will continue into eternity. This is not to say that a child would put it this way, but his or her discussions of the social order seem to make such a tacit assumption. A similar inability to understand human mutability can be seen in the ways human personalities are understood, as a fixed and more or less unalterable condition, modifiable only through drastic intervention.

It should be understood that the cognitive limitations we have stressed in this account will in the fullness of time disappear, and all youngsters in the educational system will be capable of achieving an adequate grasp of social, political, and philosophical ideas. For that reason one might well argue that the best tactic is to delay one's effort at teaching a given order of concept until the child is ready to absorb it. My own feeling--and it is no more than a feeling--is that it may be more hazardous to wait too long than to jump ahead. There is a genuine danger in giving the child more than he or she can cope with intellectually; but there is a great deal to be said for encouraging small leaps in comprehension, in introducing material just beyond the child's grasp, and making education a source of continuous challenge.

THE VIEW OF DAVID ELKIND

Joseph Adelson has presented a most insightful and empathic description of the limitation of adolescents' thinking. These limitations speak to the need to examine curriculum materials in the light of cognitive levels of the young people to whom they are addressed. Two issues are raised. One is the cognitive assessment of adolescents and the other is the revision of curriculum in the direction of a greater match between cognitive level and material to be learned.

With respect to assessment both formal and informal procedures are available. A number of investigators have been pursuing the construction of objective tests for assessing adolescents' level of formal operational thinking (Neimark, 1979). Such tests can give the educator some rough guidelines as to where particular adolescents stand with respect to formal operations. While such tests are certainly far from perfect, they might target those adolescents in need of special help and those who benefit from enrichment.

In addition to the formal methods of assessment, there are some rough and ready observational indices that teachers can use when working with individual adolescents. Language is often a good index of formal operational thinking. Young people who have attained formal operations, to illustrate, are more likely to use mental and motivational terms than are children. Adolescents will talk about "thinking" or "intelligence" or "belief." And they make mention of complex motivations, "He said that because he wanted you to think that."

Similar changes can be observed in the formal operational person's comprehension of language. Punning may be the lowest form of humor, but it requires the highest form of intelligence to be produced and to be understood. In a school play, recently some adolescents came up with the following line to describe the female lead, "A little fillet with a touch of sole." And the Hasty Pudding production at Harvard this year was entitled "Sealed with a Quiche." In addition, one of the characters was named "Toby or not Toby." Children would not grasp the double meanings of these "word plays."

A simple direct method of assessing concrete operations is to ask adolescents to interpret proverbs. The proverbs "Let sleeping dogs lie" for example, can be interpreted concretely or abstractly. A concrete interpretation would be something like "Let dogs who are asleep alone" or, "Don't wake up sleeping dogs." A more abstract, formal operational response would be "Let well enough alone." Such a response makes a broad generalization from a concrete example, the essence of formal operational thinking. In a similar fashion, adolescents who read "Mad" magazine or the "Hobbit" or who enjoy playing "Dungeons and Dragons" are likely to be formal operational.

Such informal assessments can give the teacher some clues as to the adolescent's level of cognitive development. It has to be said, however, that these are just clues. Young people do not automatically extend their mental abilities to all domains. A child who reads "Mad" magazine who understands the satire may not automatically extend his metaphoric understanding to, say, algebra. In algebra, letters stand for numbers and this is a symbolic transformation which is different in kind if not

in level. We should, however, expect that the young person who reads "Mad" would have an easier time learning algebra than an adolescent who is really unable to get many of the "Mad" jokes.

If we turn now to the curriculum a different approach is required. Basically, what we have to ask is "What mental operations are required to understand this material?" In some cases, such as algebra and grammar the question is relatively easy to answer. By definition, as suggested earlier, algebra deals with a second order symbol system, symbols for symbols (letters for numbers) and thus requires formal operational thought. Roughly the same is true for grammar. Terms such as "noun," "pronoun," "declarative," and "interrogatory" are symbols for symbols and thus require formal operations for full understanding. When children are taught grammar in elementary school, there is, in effect, considerable wasted time. They would be better off reading and writing than reading and writing about reading and writing.

Although not quite as obvious, something similar could be said about history. To the extent that history requires the understanding of time concepts such as "a generation" or "a century" or "hundreds of years" to that extent does it require formal operations. The concept of "a century" is after all, a symbol for other symbols. A year is a symbolic representation of a time period and a hundred years is a higher or second level symbol for that first level symbol. Time is a difficult concept for children in any case (because it is not tangible) and higher order time concepts are really not understood until young people have attained concrete operations.

Does this mean that children should not be taught history until they are in high school? Not necessarily. If historical sequences are taught as such, as sequences, then they can be understood by school age children. For example, children can learn the sequence of clothing styles, architectural designs, economic activities and political systems that characterize particular countries or societies. Such sequences give the young person a sense of historical change but do not require a secure grasp of the time parameters involved. Such an approach to history, by the way, would probably be a more interesting introduction than the more usual rote memorization of specific names and dates.

Science teaching is still another example where a grasp of the operations required for certain kinds of learning might reorient the sequence of topics. Experimentation, for example, requires formal operational thinking to be fully understood. This is true because the quantification of variables is already a highly symbolic activity. The idea of holding one or more constant while varying others is again a second order manipulation of symbols. When we call "length" or "weight" a variable, we are already raising it to a higher level of abstraction and symbolization.

But, it might be objected, children can perform experiments at a more simple level than that. Can't they discover, say that heavy objects sink in water and light objects float? Yes, but such generalizations are first of all higher order abstractions and are not likely to be understood in all of their complexity. Oil tankers, for example, are heavy and they float. Peas, in contrast, are light but they sink. To really understand floating and sinking requires concepts such as density,

volume, displacement, that are beyond children's comprehension in their true conceptual sense.

Again, this does not mean that science cannot be taught at the elementary school level. It needs to be taught, however, in a way that is consistent with the child's ways of thinking and knowing. Elementary school children are collectors and gatherers. Collections of baseball cards, stamps, coins, matches, hats, dolls, etc.. are familiar examples of this "urge" to collect. Children not only collect, they classify. They know the varying quality, say, of each coin in their collection. Now observation, collection, classification are the basic activities of any science from which the more advanced experimental stages have evolved. It is the natural history stage of inquiry.

The danger of leap frogging this natural history stage of inquiry is illustrated by American psychology. By striving to be a science too soon, much time and effort was wasted in studying rats "experimentally." The worship of experimentation to the exclusion of other scientific methods ignores the history of science. Without holding to a recapitulation theory, it is nonetheless reasonable to encourage collecting and classification as the basic science activity of the elementary school student. Such classification and collecting is perhaps the most solid foundation we can provide young people who want to understand and work in experimental disciplines.

In this commentary, I have suggested some ways in which the curriculum can be more finely tuned to the cognitive levels of children in schools. I firmly believe that a curriculum organized on the basis of its psychological difficulty for young people would make learning these subjects matter areas both more interesting and more meaningful for young people.

THE VIEW OF ALLAN GLATTHORN

Joseph Adelson's recent research on adolescent thinking seems to have clear implications for both curriculum and schools in general.

The first implication concerns the curriculum for the middle school years. Adelson found that the cognitive operations that many children can perform at the ages 13 to 15, when confronted with mathematical and scientific problems, are beyond the reach of all but the most exceptional youngsters when they confront social and humanistic problems of equivalent difficulty. Even among the exceptional group in these areas, the higher level is not achieved until the age of 18.

Adelson's work clearly suggests that the middle school curriculum in the humanities should not be over-loaded with abstract concepts but should instead provide ample time for students to begin with concrete experiences and, under the careful guidance of a skilled teacher, move gradually to the acquisition of abstract learning.

The evidence available to us suggests that most middle school curricula in English language arts and social studies demand too much of the learners in this respect. Consider first the situation in English language arts. My experience as a consultant for school districts revising middle school language arts curricula has convinced me that in every case too many abstract grammatical concepts are taught before they can be understood. The most widely used English language arts basal text series, Houghton-Mifflin's Language for Meaning, includes these concepts in its third grade book: antonym, common noun, compound word, noun, proper noun, predicate, sentence pattern, verb, subject, synonym, helping

word. And my own observations of numerous middle school teachers lead me to believe that they spend too much time futilely trying to teach such literary concepts as theme, symbol, and metaphor.

The evidence from other disciplines is equally discouraging. Consider, for example, the questions which one "humanities" curriculum poses in a single unit for seventh grade students:

- What is satire?
- What are the components of satire?
  - --Satiric norm
  - --Satiric target
  - --Satiric vehicle
- What form does satire take?
  - --What is sarcasm
  - --What is irony
  - --What is parody
- How many satirists looked at specific topics?
  - --At manners and mores
  - --At education
  - --At technology

The same curriculum guide in a previous unit asks students to understand these "universal components of all cultures": cultural background, themes, economics, food, clothing, shelter, family, political organization, attitude toward the unknown, communication, arts and aesthetic values, recreation. And all in five or six weeks (Brandt, 1981)!

The answer, of course, is not to eliminate the learning of concepts from the middle school curriculum. Ausubel (1980) reminds us that it is important for the middle school teacher to begin by identifying the particular learner's level of cognitive functioning in each subject matter area and to individualize accordingly. And, as Eson and Walmsley (1980) note, the middle school years provide us with a unique opportunity of linking the subjective life and the objective, formal analysis of it.

But Adelson's paper and his comments at the RBS symposium raise some larger questions about the nature of an effective secondary school. He holds before us a vision of a secondary school where students will have an opportunity to examine essential concepts in the social sciences under the probing of an insightful sensitive teacher and where they will have an opportunity to participate in what he calls the "rituals" of student activities and student governments. While I doubt that participation in meaningless rituals will help them develop some deeper insight into the nature of the political processes, I am in general accord with his recommendations. And I am concerned that those recommendations are somewhat discordant with many of the tenets of the "effective schools" movement.

While many researchers (including those from Research for Better Schools) do have a broader view of what effective schooling is, too many educators seem to advocate what I believe is a reductionist view of effective secondary schools--one that is unwisely built upon extrapolations from the research on "effective" elementary schools. Such a reductionist view sees effective secondary schools as places where the

following features are prominent:

- Teachers use the direct instruction model, emphasizing memory questions in rapid-fire recitation.
- Teachers emphasize whole-class instruction.
- Reading, writing, and mathematics are emphasized as the "basic skills."
- Orderly discipline is enforced by a tough-minded administrator who imposes rules developed by administrators, with little input from students.
- Student activities are considered of less importance; all that matters is the task-oriented classroom.

Such schools, I would argue, would not be effective in Adelson's terms--nor would they provide the kind of educational environment that Gump (1980) says has social meaning for the adolescent. He reminds us that effective secondary schools also should be places that respond to the adolescent's need for peer exchange and that see learning experiences as something broader than classroom academic transactions.

Although I am not sure that Adelson's research was directly related to the question of effective secondary schools, I do think his findings raise some important issues. I would note, however, that Presseisen's (1982) paper raises some more central issues, and I would hope that RBS will continue to investigate the particular ways in which effective secondary schools would be different from their elementary counterparts.

THE VIEW OF IONE VARGUS

The school system interacts with other systems. It is faced with demands from the community to resolve critical social problems. Whether or not it is the appropriate system to deal with these demands is debatable, but the chances are that the school will continue to be looked to for educational innovations and curricular changes to respond to these demands. Adolescents are not untouched by these community concerns; in fact, they are often the target for the desired changes.

There is a tremendous amount of research on adolescents. Some of this is conflicting. There is no single theory of adolescence, which makes our attempts to develop programs for them more difficult. In other words, one can use a variety of theories to discuss what is the norm.

Two major views are the social-psychological theories and structural theories. The former focuses on the individual and concentrates on the issue of identity. Thus, using this theory, social activism, conservatism, or delinquent behavior comes from the adolescent's view of him or herself.

Structural theory deals with the larger society and identifies behavior within that focus. Thus, the socio-economic status, the discrepancy between what power adolescents really have and what the society expects, the lack of institutional means for the achievement of what others have, and neighborhood social organizations are concepts used to explain the adolescent's behavior.

Both theories interconnect to help practitioners understand the adolescent's needs and behavior.

In Tasks of Adolescence, Barbara Varenhorst (1981) defines these tasks.

1. Experiencing physical sexual maturity.
2. Developing one's individuality, for example, "Who am I?".
3. Forming commitments.
4. Separating and acquiring autonomy.
5. Outgrowing types of egocentrism, for example, getting over being so self-conscious.
6. Re-evaluating values.

Re-evaluating Values

The latter task is the focus of this commentary. As adolescents begin to develop the ability to think beyond the concrete abstractions of life, they begin to form their own moral judgments. They question adult values. But in order to form their own, they need a stable set of values against which theirs' can be tested. I think that this is the dilemma that young people face today.

Our society has been changing rapidly. Changes that once would have taken half a century now occur in a few decades. The future becomes more uncertain and, as we have seen recently, the direction of our country was modified overnight by a national election. Values of equal opportunity, full employment, avoidance of nuclear war, economic protection for those with low income, wide access to higher education, concern for civil rights, and concern for human rights have been or are being re-considered, as evidenced by policy changes. This is a dramatic example of how no one can know whether what is decided today will remain valid in tomorrow's world.

When there is inconsistency about values in the "adult" world, several things may happen. 1) The peer group, which is already very important to adolescents, becomes even more powerful and supersedes the parents. 2) Youth may be left feeling very lonely and depressed. Teenage suicide tripled between 1955 and 1975. Spencer reported in 1979 an average of 57 children and teenagers attempting suicide every hour (Varenhorst, 1981). 3) There is greater pursuit of pleasures and escape through drugs, sex, and crime. 4) Youth seek absolute answers by joining cults or extreme religious, political, or social movements.

We may remember the heavy involvement of young people in social movements during the late 1960s. Black students protested the conditions of white campuses and made a variety of demands. Later white students protested the war in Vietnam. Both of these movements filtered down to secondary schools and their student populations. Afro-American societies, sit-ins protesting the war, and many social movements were formed not only at colleges and universities, but in public schools, too.

To belong to such groups and to make societal demands definitely gave young people and adolescents the opportunity to engage in the normal tasks of adolescence, to feel a sense of control and recognition. In most cases, their involvement was constructive (although adults often didn't behave as if it was).

I predict we will see active student movements again. While those which captured the most attention in the '60s were ideologically progressive, for example they demanded equal rights, and reduction of racism and other forms of prejudice, I believe that this time we will see greater diversity of programs. We will find groups of adolescents

concerned about the poor, about a future of possible unemployment, etc., but we will also see those groups who engage in demanding less equal rights, who revive and reinforce the tone of racism that is reemerging in society and who carry out such acts in relation to these goals. This is why the Anti-Defamation League in Boston, in coalition with a number of other groups, is seeking a law that makes cross-burning more than a misdemeanor. In addition, politically conservative student movements may become more active and more visible.

The young people who rebel against social conditions which we know need to be changed may engage in more serious acting-out behaviors than we witnessed in the '60s. Taking over buildings, sit-ins, and similar protests were prevalent then. But recently in England, young school children--following the lead of older youth who rioted in the streets over such issues as unemployment--have completely disrupted a school to the extent that it had to be closed for two weeks. Teachers were unable to enforce any discipline and the headmaster of the school resigned.

So, what goes on in the world definitely affects our youth in the schools. They may not be able to define the words as Professor Adelson notes, but they may certainly act on their perspective of the principles involved.

Furthermore, as we all know, young people often learn or understand social reality from sources outside the school. One source that we sometimes forget is black music. During times of uncertainty and changes in values, black music often carries potent messages. While young people may seem to be attracted to only the "best," the words eventually sink in, even to those in early adolescence. There is now an upsurge in music

and songs such "Let's Fight for Human Rights" which will expose adolescents to values which may go far beyond what they learn in the traditional classroom.

Even from a pragmatic, non-ideological view, we are now seeing the impact of social policies on the school community. This spring, students who receive social security benefits matriculated in colleges before graduating from high school in order to take advantage of those benefits, which will soon no longer exist. Other students wonder if it is worth the effort to take college-bound curricula since they or their families may soon be ineligible for loans and financial aid. What kind of climate does this leave in the school community and how will the motivation of students be affected? Do we ever stop to think what values we are transmitting to students whom we are encouraging to leave high school early to get around the government's intent?

Concluding Remarks

In summary, while there has been much attention to the influence of home, peers, and community on adolescent behavior, education needs to recognize the larger context which impacts on adolescent behavior and thereby the schools. Whether educators need to intervene through curricula or by pragmatic means is an open question. The challenge, rather, is to understand that outside influences find their way to the schools, and that the task of helping adolescents re-evaluate their values is difficult in our complex society.

THE VIEW OF FREDERICK MCDONALD

I believe there is a different way of interpreting Professor Adelson's data. His view is that when we observe adolescents we see the processes and products of developmental change. My view is that we see the processes and products of cultural thinking, and cultural thinking of the special society in which the adolescent lives. Is this alternate view plausible? I think it is and here is why I believe it to be as compelling an approach as Professor Adelson's.

Adolescents live in a society which is relatively isolated from the larger adult societies; a society which has its own mores, cultural values, modes of dress and speech, cults and cult heroes, social strata and status symbols, and kinship systems. Because it does, it functions autonomously except in one important respect; it is not self-supporting. Adult society supports it.

This adult support, disguised as it may be, shapes the character of adolescent society because it gives ultimate control of the adolescent society to adults. Because adolescents cannot be self-supporting, they cannot participate in the forms and rituals of adult life; they engage in a limited form of productive work, studying; they cannot govern themselves except in trivial ways or in covert groupings. During most of this period of their lives, they are confined to an institution which regulates their behavior, their time, their associations, and in which they do managed and prescribed work.

If you experienced only imposed "law" in the form of poorly rationalized rules; if you lived in a collective, governed by persons

whom you did not choose as your governors; if you saw moral choice as doing what you have been told to or rebelling, would it be surprising if you had views like those which Professor Adelson uncovered? What would be your sense of community if you were involuntarily regrouped every hour, trooping from one room to another? If you were all treated alike, would we find differences among you in your thinking, especially if you were living in a self-contained society?

Consider that the school is only one influence and that adolescents are exposed to media influences more than they are to that of the school. Contrast the prime-time TV dramas and situation comedies which early adolescents watch, with the soap operas which later adolescents and young adults find so intriguing. In the former, motivation is simple, punishment is direct and serve for wrong-doing. In the "soaps" motives are mixed, devious, and arouse empathy; a greater range of moral behavior is portrayed, and its consequences are complex. Would an analysis of these media portrayals and of songs popular with different age groups reveal differences in concepts of the kind found in the protocols of Professor Adelson's adolescents? Are the adolescent's moral and social views shaped more by TV and what other adolescents think about these portrayals or by a textbook description of law?

If it is true that adolescents live in a distinct and different culture, and almost everyone believes they do, then we need to discover its conceptual matrices, identify their cultural sources and referents, and the wellsprings of cultural inspiration and ideology. Professor Adelson's protocols, in my opinion, are sourcebooks of cultural thinking; the changes in it which he has detected are the changes which occur as

the inductee moves progressively up the cultural steps, tempered by the seasons of its moods and emotions and the cycle of its beliefs.

Would Either View Make an Educational Difference?

Although Professor Adelson has eschewed pointing to immediate and direct applications of his inferences and data, the direction of potential applications is clear--arrange the content of the high school curriculum and focii of teaching strategies to capitalize on these developmental features of the adolescent's thinking and thereby increase instructional effectiveness. This position is reasonable and merits serious attention.

But if these data reveal cultural thinking and are products of various social influences, this strategy strengthens these cultural influences by accommodating them. The school's curriculum will parallel the progression from "Little House on the Prairie" to "General Hospital."

If these data reveal cultural thinking, an alternative strategy is needed, one which brings to bear social influences which will deepen this thinking, and open windows on other perspectives. But it is doubtful that the school as we know it can do this.

The Reconstructed High School

We return to the question, what kinds of concepts of law, human motives, and of community can be learned in a society where there is limited choice, where these are of little social significance; where there are few opportunities for self-governance or for creating new

social forms for customs; where productive work leads only to completing requirements but not to more challenging work or to independence?

The high school as we know it was created long before there was an adolescent society, which was a product of the ethos of the 1950s. The post-war generation of parents, immersed in creating a better life for their children, fostered and supported the romantic view of high school life. At the same time, other social forces worked to keep adolescents in high school by eliminating alternatives in the world of work. The Scholastic Aptitude Test (SAT) became a symbol of crisis and the college degree was required more and more for jobs whose work did not need it. The result was an intensification of the processes of making high school a place apart, and the time for it a stepping aside from the responsibilities soon to be faced in college and work. But high school education remained essentially the same.

Educators face the dilemma of running an institution built for a different society, a post-World War I society, where many youths could go to work if they chose, where few went to college and where you could learn a trade better in apprenticeships that you could in many vocational programs. But much of this work has disappeared, and 60 or more percent of adolescents go to some form of post-secondary schooling. Does the high school in its present form serve any other purposes than as a way-station and a holding-pen? Is it more than a place where the adolescents create their special culture?

Is there a way out of this fix? I believe there is, but it requires abandoning the romantic view of adolescence and creating--in place of the

high school--a system of social services, including opportunities for full employment, education, social action, governmental and military service, and the freedom to select among these, to move from one to another, and to live appropriately for one's current activity. Alternate forms of living would become equivalent to attending school, which would be only one of these alternate forms, but all the alternate forms must be useful and productive.

The goal is to change the character of adolescent society; to destroy much of its current forms and to substitute for it opportunities for productive work and learning, independence and self-direction, and when the individual chooses, the freedom to support one's self and all that that implies. A new ethos would be created; importance would be attached to intelligent decision making and to assuming social responsibility.

Schools would be components in a system of services, free to offer specialities and general education, to select for programs and to set rigorous standards. The system of social services for youths would be organized and managed by educators; guidance and counseling would be core services. An effective school would provide quality services for which that school has been designed.

The issue is clear. Should we modify what we are now doing or radically restructure the adolescent society which we have created? The challenged is at education's doorstep.

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